

Running Head: MORAL CLIFF

Moral Cliff: The Discontinuity of Moral Judgment

Rachel Uhlman

University of North Carolina at Chapel Hill

Advisors: Dr. Kurt Gray, Chelsea Schein

April 4, 2014

Abstract

Although many aspects of life exist on a continuum (e.g., color, intelligence, skin pigmentation), distinct classifications are made to distinguish between different categories of each concept. Moral judgments are similarly split; instead of a smooth continuum from good to evil, the moral landscape is perceived as discontinuous. A series of five online studies examine the discontinuity of moral judgments. Non-moral judgments of intimacy, pain, theft, fetal development and torture were predicted to follow a linear trend while moral judgments of these actions were predicted to be curvilinear. The studies demonstrate that moral judgments of intimacy, fetal development and torture are discontinuous; a moral cliff exists where the judgment of certain actions changes from good to bad. Possible mechanisms and implications responsible for the moral cliff include moral polarization, moral convictions and the idea of a slippery slope of morality.

.

Acknowledgments

This project was supported by the Tom and Elizabeth Long Excellence Fund for Honors, administered by Honors Carolina. I would like to thank my advisors, Dr. Kurt Gray and Chelsea Schein and the rest of the Mind Perception and Morality Lab for their continued support and dedication to this project. Without their assistance and guidance, this work would not be possible. I would also like to thank my family and friends for encouraging me throughout this process.

Moral Cliff: The Discontinuity of Moral Judgment

“That crossed the line!” “You have gone too far!” “I’ve overstepped my bounds!” These phrases are often heard in the context of wrongdoing. Why is it that metaphors such as these are often the first to come to mind when morality is involved? Our use of the English language draws attention to the discrete manner in which moral actions are distinguished from immoral ones. We all know that we live in a world that is not strictly black and white; life contains many nuances and shades of grey. However, in relation to morality, people often fail to perceive these nuances. In a more visual manner, the moral input all of us receive from our environment is continuous, but once moral judgments are formed the moral outputs become discontinuous (see Figure 1). Moral judgments may contain a moral cliff or discrete moment when an immorality judgment is made. In the following five studies, we investigate the existence of discontinuous moral judgments.

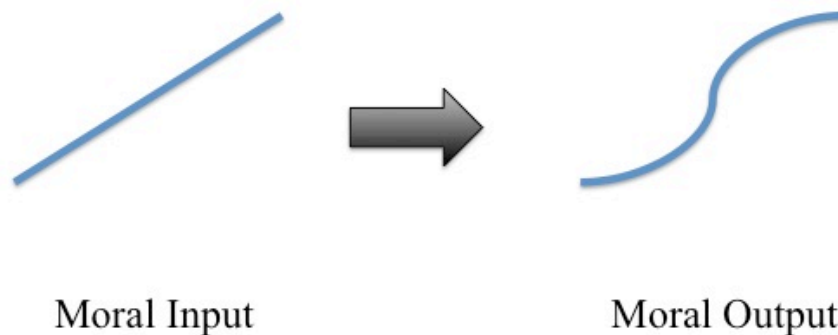


Figure 1. Demonstration of continuous moral input and discontinuous moral output

Many aspects of life exist on a continuum. The transition from black to white goes through the color grey, although it is hard to distinguish when that conversion actually occurs. Children grow into adults and continue maturing. Yet it is difficult to isolate a distinct moment at which a person becomes an “adult,” because human growth is a gradual progression.

Furthermore, a friendship can evolve into a romantic relationship, but the exact time that feelings develop is often hard to determine. Yet people tend to form distinct classifications of continuous items, such as black or white, child or adult and friendly or romantic. We predict that more than many things, matters of good and evil seem to be categorized on two distinct poles: black or white, but rarely indeterminately grey. The dead go either to heaven or hell; people are either sinners or saints; and governmental policies are just or unjust, not only useful or misguided. Individuals make moral judgments every day, consciously or not. Moral judgments are split; instead of a smooth continuum from good to evil, the moral landscape is discontinuous, with judgments of acts clustering at the peaks of righteousness and in the valleys of sin. In this paper, we examine whether the output of moral judgment is more discontinuous than the input of the non-moral content.

The Need to Categorize

Moral judgments are formed to evaluate the ethical nature of an action and to ascribe virtue or blame for that action as appropriate. Moreover, they serve as a manner of categorization. Humans compartmentalize people, actions, behaviors and decisions in order to maintain order and establish meaning in the world. Initial impressions, which are automatic, are based on our categorizations of others' gender, age, race and appearance, among other attributes. Forming distinctions and identifying differences and similarities between people are human approaches to reducing ambiguity in the world, especially given a situation containing limited or imperfect information, as many moral circumstances may (Fiske, 1993).

Given this need to reduce ambiguity, people are subject to the 'tyranny of the discontinuous mind' (Dawkins 2013), forming judgments in an all-or-nothing manner. Dawkins initially applied this phrase to the concept of evolution. Genetic code is extremely diverse and

overlaps between various organisms, yet we form categorizations of species within it. Although genetic code is a continuous entity, we see discrete differences between a man and a monkey. With the input of genetic code, the categorization of animals into species is the discontinuous output.

The categorization of species is an instance of arbitrary distinctions we form. Intelligence is another example. This spring, the Supreme Court will determine whether the State of Florida can execute Freddie Hall, a convicted killer who has been deemed “mentally retarded” (Sherman, 2014). Intelligence exists on a continuum and measurements of IQ are fraught with error and ambiguity, but for the state of Florida there is a clear line. If Hall’s IQ is below 70, he will live; if it is above this strict cutoff, he will die. An IQ test as a determinant of mental capacity is an example of the tyranny of the discontinuous mind and one that, in this case, determines life or death. A judgment of moral responsibility will determine Freddie Hall’s guilt or innocence.

Failure to Perceive Ambiguity in Abstract Judgment

The influence of categorization has been demonstrated in abstract judgments through color perception tasks. When participants were presented with a color gradient, those who had been primed to be in a categorical mindset saw more distinct colors on the gradient. Those primed with a continuous mindset saw more similar colors. In these studies, the mindsets of the participants also affected their moral judgment. Participants read about a scenario involving gradually escalating behavior that eventually lead to rape. Those in a categorical mindset judged the rapist as more blameworthy, compared to the participants in the continuous mindset who did not see the perpetrator’s end behavior to be as immoral (Hartson & Sherman, 2012). We hypothesize that when forming moral judgments, an intuitive categorical mindset is utilized.

Actions or situations are perceived as black *or* white, but rarely the intermediate color of grey. A moral judgment gradient is dichotomized.

Racial Categorization

The limits of categorization have been well-documented in research on race and racial prejudice. Skin pigmentation exists on a continuum but is often viewed categorically. People are seen as Black, White, Hispanic, etc., not as a combination of multiple races. The concept of hypodescent (Harris, 1992), where the race of a mixed-race child is often identified as the race of the ‘socially subordinate’ parent, intriguingly demonstrates people’s intrinsic need to categorize. Even when others do not fall into a distinct racial category, people still categorize them into discrete categories. For example, Peery and Bodenhausen (2008) conducted a study where participants rapidly classified racially-ambiguous faces into either White/not White or Black/not Black categories. When no parental or demographic information was available, participants identified more racially-ambiguous faces as Black more frequently than White. Judgments are quickly formed about people’s race even when they do not fall into a distinct racial category. With a continuous input of skin pigmentation, the discontinuous output is racial categorization.

In fact, the need for categorization is so strong that situations that challenge people’s ability to categorize are experienced as aversive. In a recent study by Halberstadt and Winkielman (2014), participants rated the attractiveness of bi-racial individuals’ faces. Faces that were easily classified as either distinctly Black or White were rated as more attractive than faces that fell into a racially ambiguous middle ground. A face that was harder to categorize into its components was generally more disliked (Halberstadt & Winkielman, 2014; see also Chen & Hamilton, 2012; Ho, Sidanius, Levin, & Banaji, 2011). This research demonstrates that even though people are aware of multiracial ethnicities, increasingly common in the United States,

individuals still desire to classify multiracial people in one specific racial category as opposed to a combination of multiple races. People feel more comfortable when they can categorize an ambiguous entity, such as a bi-racial face, into a well-defined grouping.

We predict that moral judgments follow a discontinuous pattern, similar to categorizations of racial perception. Ethical gradients and degrees exist, but judgments about ethical issues are strictly divided between moral and immoral. This reality is seen through the moral issues that define our political landscape and often divide our country (Haidt, 2012; Skitka et al., 2005). The abortion debate continues between pro-choice and pro-life advocates, and many individuals support the death penalty while others think it should be outlawed. Same-sex marriage, gun control and the legalization of marijuana are powerful examples of political disputes intrinsically tied to personal views of morality. These ‘hot topic’ issues involve multiple perspectives with no definitively “true” answer; nonetheless people confidently make absolute judgments of right and wrong.

Moral Typecasting

Our tendency to categorize is also evident in the domain of moral typecasting, which involves classifying doers and receivers of actions. Although we know that a person could be both a moral agent, the “doer” of good or evil actions, and a moral patient, the “[recipient] of good/evil”, when moral actions are judged, someone is identified as either the perpetrator or the victim, but never both (Gray & Wegner, 2009). Analogous to the concept of moral typecasting is one’s perception of the well-known reversible figure illustration, “My Wife and My Mother-in-Law” (see Figure 2), which depicts both a young woman and an old, witchlike woman (Boring, 1930). Although two images exist in this figure, an individual cannot see both women

simultaneously. A mind naturally distinguishes between the young woman and the crone, similar to how individuals develop divergent moral typecasts of patient and agent.



Figure 2. “My Wife and My Mother-in-Law”

A real-world instance of the duality of moral typecasting is that of George Zimmerman. Two years ago Zimmerman fatally shot 17-year-old Trayvon Martin. The details of the case are still ambiguous. Only Zimmerman knows what transpired between Martin and him, and public opinion remains divided. Supporters of Zimmerman believe that he acted in self-defense, identifying him as a moral patient (Francescani, 2013), while opponents believe Zimmerman wantonly murdered young Martin, casting him as a moral agent and a ruthless vigilante (Lawson, 2012). Therefore, the manner in which one distinguishes between moral agents and moral patients parallels the distinctions one makes in our moral judgments.

The grouping of colors, the classification of race and moral typecasting are examples of an overarching human tendency to perceive the world in discontinuous terms. Evidence seems to suggest that this extends to the moral domain as well. These studies will expand the scientific understanding of morality by illustrating systematic biases in our moral judgments of others and

peoples' reactions to events. The research can also be extended to real-world situations by investigating why compromise is often so hard to achieve when contentious topics are at issue and why political polarization is so powerful. In summary, we predict that the moral landscape is curved; moral judgments of actions are either distinctly good or distinctly bad. This claim will be investigated through a series of five online surveys.

Current Research

Five studies investigated the curved nature of the moral landscape. We tested whether non-moral judgments of intimacy (study 1), pain (study 2), theft (study 3), fetal development (study 4) and torture (study 5) proceed linearly, whereas moral judgments of these actions are curvilinear. These five acts were chosen because they all contain both moral and non-moral components. Additionally, all five acts span a diversity of moral concerns that are often relevant to people's lives. We predict that for increasing magnitudes of each act, non-moral judgments will proceed linearly while moral judgments would be curved.

Study 1: Intimacy

Participants

One hundred and eighty-eight participants completed the study through Amazon Mechanical Turk (mTurk). Participants earned \$0.25 a study. Internet samples are frequently used in psychological research (Skitka & Sargis, 2006), and mTurk recruitment maintains reliability equal to that of lab-based populations (Buhrmester, Kwang, & Gosling, 2011). Participants were excluded if they failed attention checks (e.g. instructional manipulation checks; Oppenheimer, Meyvis, & Davidenko, 2009) or if they failed to follow instructions. Of the initial 188 participants, 31 people failed the attention check, leaving 157 participants (43% female, 57%

male). The mean age of the participants was around 32. All the participants were from the United States.

Procedure

This study tested the difference between perceptions of intimacy and immorality through a 2 (relationship status: single vs. married) x 2 (question: morality vs. intimacy) between-subjects design. Participants were instructed to read a short vignette about Joe and Kate who become friends at a networking night and then engage in ten increasing acts of intimacy, from becoming Facebook friends, texting each other, and going out to dinner and to kissing passionately. To manipulate the morality of the act, participants were told that Joe and Kate are both either single or happily married to other people. Additionally, after each action, participants made either a moral judgment (“How immoral is this action?”) or an intimacy judgment (“How intimate is this action?”) on a 5-point Likert scale from “Not at All” (1) to “Extremely” (5). After rating all ten actions, participants completed demographics questions including age, gender, country, and political leaning, measured on a scale from “Strongly Liberal” (1) to “Strongly Conservative” (7).

The Institutional Review Board of the University of North Carolina at Chapel Hill approved this study design and all further studies, and participant consent was obtained at the beginning of each survey.

Study 1 Results

Data Analysis Plan

Since acts were designed to increase in intensity, in this and all subsequent studies, acts were treated as a continuous variable. If moral judgments are discontinuous, we predict that in addition to a linear trend, a curvilinear trend between action intensity and rating will exist in the

moral but not non-moral condition. To test this, the linear, quadratic and then cubic terms were entered into a stepwise regression, and we tested whether the cubic trend had a significant R^2 change.

For this study's results, all four conditions were run; however, the key comparison exists between the single intimacy condition and the married immoral condition. The single immoral condition displayed little variance between judgments (see Figure 3) and the married intimacy condition contained a slight moral component acting as a hybrid between the morality and intimacy conditions.

Non-moral Condition

Linear: In the single intimacy condition, the linear trend accounts for 69% of the variance in ratings, $F(1, 348) = 780.67, p < .001$.

Curvilinear: The addition of the quadratic, R^2 change = .002, and cubic, R^2 change < .001, terms did not significantly increase the variance explained in the model. With regard to the intimacy question, actions followed a clear linear trend.

Moral Condition

Linear: For immorality, the linear trend accounted for a significant amount of variance in the model, $R^2 = .56, F(1, 398) = 780.67, p < .001$.

Curvilinear: The addition of the quadratic, R^2 change = .014, $F(1, 397) = 12.53, p < .001$, and cubic, R^2 change = .008, $F(1, 396) = 7.83, p = .005$, terms significantly improved the amount of variance explained. As predicted, immorality followed a monotonic trend, but once this trend was accounted for, the data followed a non-linear, cubic pattern.

Multi-Level Model: Since the data are nested within person, the model was run as a multi-level model with act nested within person and yielded similar results. Only the linear trend

significantly predicting the intimacy rating, $\beta = .43$, $p < .001$, not the quadratic or cubic terms, $p > .80$, but linear, $\beta = -.51$, $p = .01$, quadratic, $\beta = -.17$, $p < .001$, and the cubic, $\beta = -.008$, $p = .001$, model significantly predicted the immorality question.

Discussion

The moral judgments of married couples engaging in extramarital affairs were discontinuous. On average, participants in the married immoral condition thought that the act of holding hands ($M = 3.34$, $SD = 1.21$) was more immoral than previous intimacy actions, such as texting ($M = 1.57$, $SD = 0.98$) and going out to dinner ($M = 2.06$, $SD = 1.14$). Additionally, after the jump from moral to immoral occurred, the remaining intimacy actions were all judged as extremely immoral (see Figure 3). In contrast, the mean judgments in the single intimacy conditions followed a linear trend, gradually increasing as the acts became more intimate. Thus, a moral cliff exists for moral intimacy judgments.

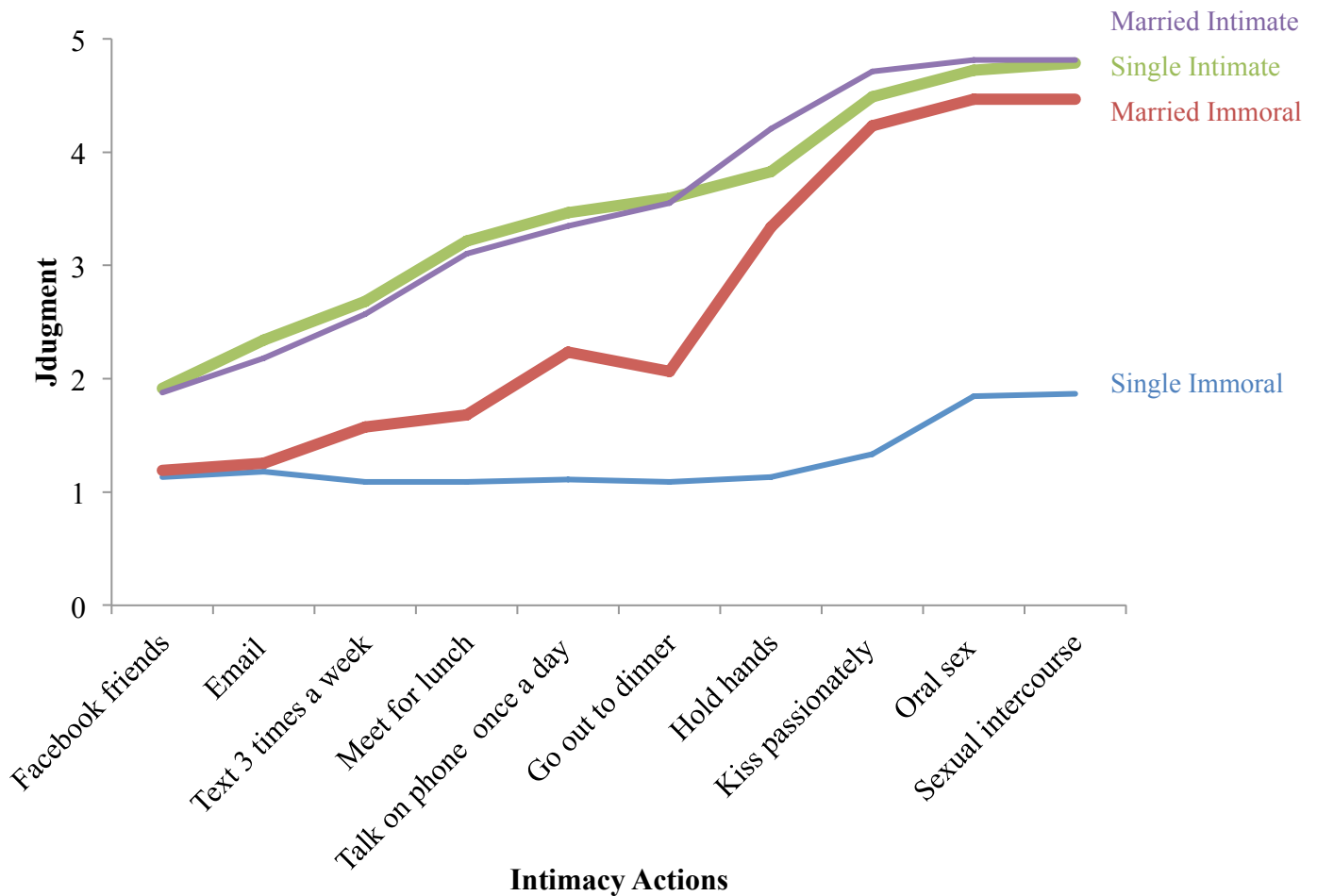


Figure 3. The means of morality and intimacy judgments as a function of the type of intimacy occurring.

Study 2: Pain

Participants

This study tested the difference between perceptions of pain and immorality through a 2 (intention: intentional vs. accidental) x 2 (question: morality vs. painfulness) between-subjects design. 192 participants completed the survey through mTurk. Of the initial 192, 33 people failed the attention check, leaving 159 participants (41% female, 57% male and 2% of participants

chose not to respond). The average age of participants was around 32 years old. All were from the United States.

Procedure

Participants read a short vignette about John and Robert, two strangers waiting to order coffee at a local café. In a series of eight increasingly painful actions, John proceeds to engage with Robert, either accidentally or intentionally, from touching to nudging to pinching and finally punching Robert. After each action, participants made either a moral judgment (“How immoral is this action?”) or a judgment about the painfulness of the action (“How painful is this action for Robert?”) on a 5-point Likert scale from “Not at All” (1) to “Extremely” (5).

Participants also completed demographics questions.

Study 2 Results

For the study results, all four conditions were analyzed, however, the key comparison existed between the intentional immoral condition and the accidental pain condition (Figure 3).

Non-moral Condition

Linear: In the accidental pain condition, the linear trend accounts for 57% of the variance in ratings, $F(1, 278) = 374.00, p < .001$.

Curvilinear: The addition of the quadratic, R^2 change = .025, $p < .001$, and cubic, R^2 change < .001, terms did not significantly increase the variance explained in the model. With regard to the painfulness question, actions followed a clear linear trend.

Moral Condition

Linear: For immorality, the linear trend accounted for a significant amount of variance in the model, $R^2 = .41, F(1, 358) = 250.93, p < .001$.

Curvilinear: The addition of the quadratic, R^2 change = .025, $p < .001$, and cubic, R^2 change = .001, $p = .429$, terms did not significantly improve the amount of variance explained.

Discussion

The results of the study did not support the hypothesis that non-moral judgments of pain would proceed linearly while moral judgments would be discontinuous. The means in every condition followed a linear trend, gradually increasing for both morality and painfulness judgments as the intensity of the action increased (see Figure 4). It is possible that the pain study did not support the hypothesis because the pain actions described are not that severe relative to other painful acts. For instance, the act of flicking someone may not be perceived as that strong of a moral transgression.

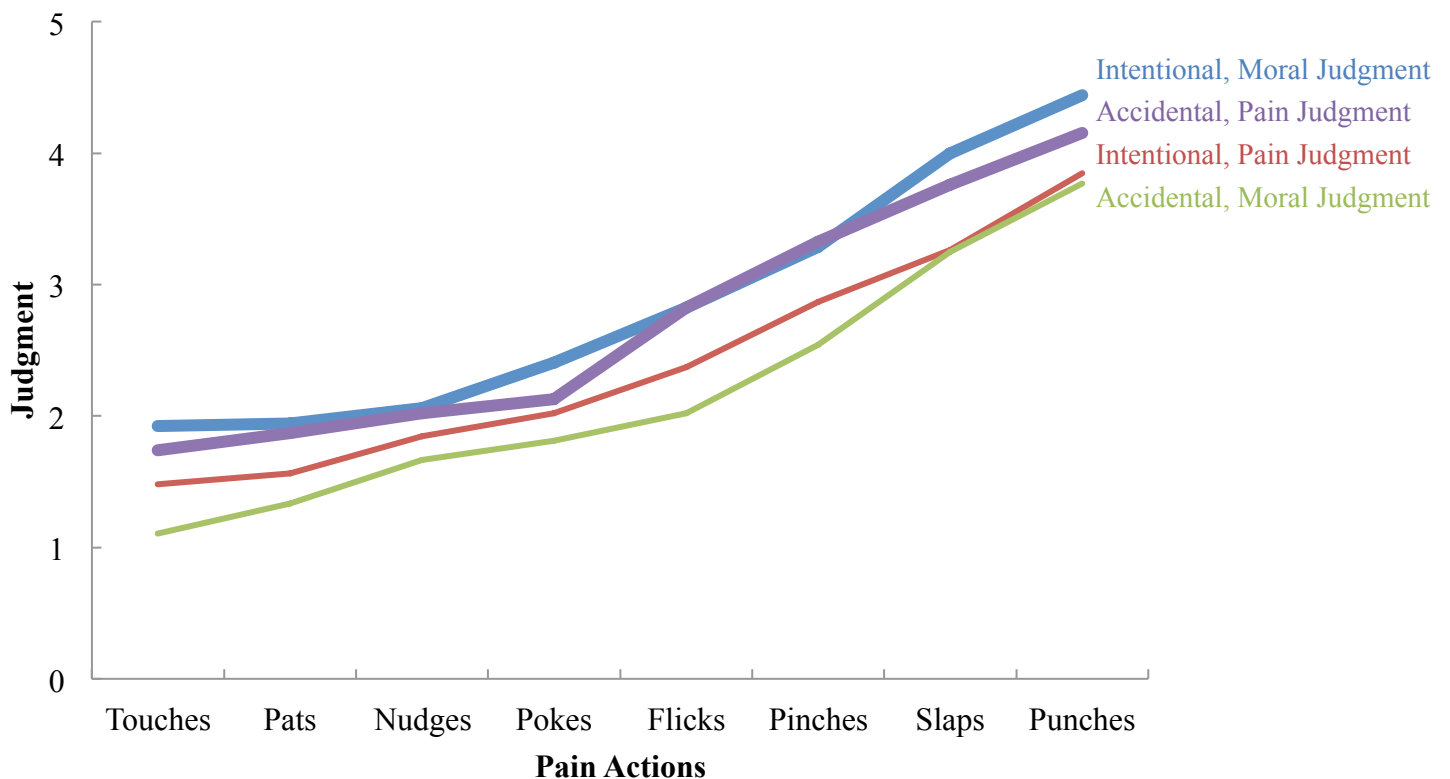


Figure 4. The means of morality and pain judgments as a function of the type of pain act and whether it was intentional or accidental.

Study 3: Theft

Participants

This study tested the difference between perceptions of value and immorality through between-subjects design. 98 participants completed the survey through mTurk. Of the initial 98, 3 failed the attention check, leaving 95 participants (42% female, 56% male and 2% of participants chose not to respond). The average age of participants was around 34 years old. All participants were from the United States.

Procedure

Participants read a short vignette about James, an employee at a large construction company. James is described as stealing ten different items of increasing value, from a pen to a computer from his office. After each action, participants made either a moral judgment (“How immoral is this action?”) or a judgment about the value of the item (“How valuable is this item?”) on a 5-point Likert scale from “Not at All” (1) to “Extremely” (5). Participants also completed demographics questions.

Study 3 Results

Non-moral Condition

Linear: In the value condition, the linear trend accounts for 58% of the variance in ratings, $F(1, 438) = 614.69, p < .001$.

Curvilinear: The addition of the quadratic, R^2 change = .011, $p < .001$, and cubic, R^2 change < .001, terms did not significantly increase the variance explained in the model. With regard to the value question, actions followed a clear linear trend.

Moral Condition

Linear: For immorality, the linear trend accounted for a significant amount of variance in the model, $R^2 = .50$, $F(1, 508) = 500.29$, $p < .001$.

Curvilinear: The addition of the quadratic, R^2 change = .014, $p < .001$, and cubic, R^2 change = .001, $p = .40$, terms did not significantly improve the amount of variance explained.

Discussion

The results of the theft study did not support the hypothesis that non-moral judgments of value would proceed linearly while moral judgments would be discontinuous. The means in both conditions were practically identical, gradually increasing for both morality and value judgments as the value of the office item increased (see Figure 5). It is possible that this study did not support the hypothesis due to the relative lack of importance of the office supplies being stolen; participants simply did not care enough. The stolen items described were everyday items such as a paperclip. Perhaps if the stolen items were seen as more valuable, such as a painting by Pablo Picasso or an antique family ring, higher immorality ratings would exist. However, in this study, the immorality of theft paralleled the perceived value of each office item.

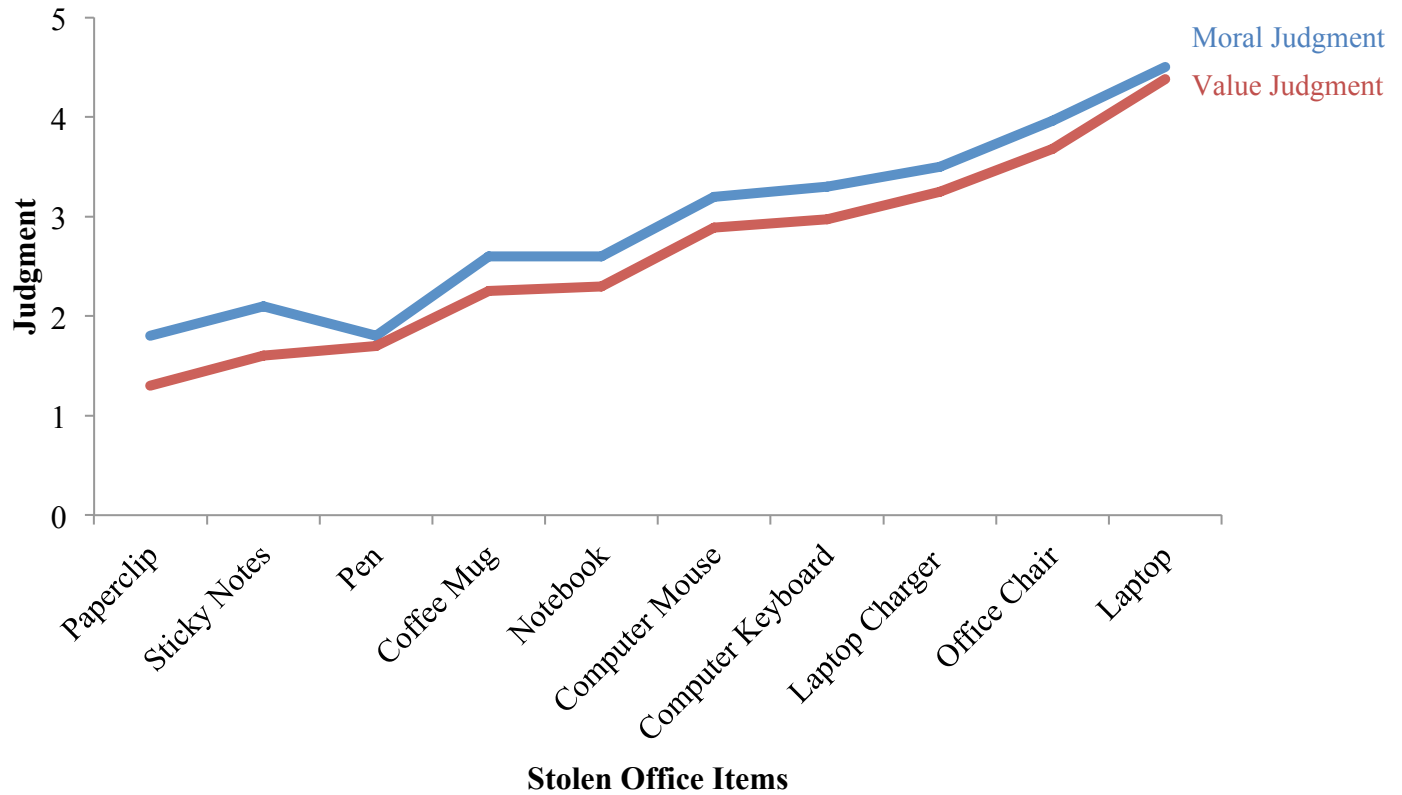


Figure 5. The means of morality and value judgments as a function of the type of office item being stolen.

Study 4: Fetal Development

This study was similar to Studies 1, 2 and 3, but tested participants perceptions of fetal development and the immorality of abortion.

Participants

Ninety-Six participants completed the survey through mTurk. Of the initial 96, 1 person failed the attention check, leaving 95 participants (43% female, 56% male and 1% of participants chose not to respond). The average age of the participants was around 32 years old. All participants were from the United States.

Procedure

This study tested the difference between perceptions of development and immorality through a between-subjects design. Participants saw a series of nine images of a fetus developing in a womb during each month of pregnancy. The images begin at month 1 and end in the ninth month of pregnancy. After each image, participants made either a moral judgment (“How immoral would it be to abort at this stage of development?”) or a judgment about the level of development of the fetus (“How developed is this fetus?”) on a 5-point Likert scale from “Not at All” (1) to “Extremely” (5). Participants rated all nine images and completed demographics questions including age, gender, country, and political orientation, measured on a scale from “Strongly Liberal” (1) to “Strongly Conservative” (2). Participants also answered questions concerning their viewpoints on abortion and questions about their acceptance of moral ambiguities from the Ethics Position Questionnaire.

Study 4 Results

Abortion is a highly polarized topic, and graphs of the data revealed that there was a great deal of individual differences in the data set, especially in the moral condition. Twenty-three percent of participants in the moral condition viewed abortion as either always moral or never moral. Additionally, participants who did increase their immorality rating varied on exactly where this shift occurred. Given the degree of individual differences, a single regression line would fail to meaningfully capture the variance in the data. A simple Hierarchical Linear Model also would fail to fit the data as the predicted inflection points occur in different locations, requiring advance methods.¹ To account for individual differences, regressions were run on each

¹ One possible model is a spline MLM model that allows for different inflection points, but according to Patrick Curan and Laura Castro-Schilo this analysis is complicated and often fails to converge.

person's responses, with the linear, quadratic and cubic terms predicting rating, and a test of model fit is the average effect size by condition by model.

Non-moral Condition

Linear: In the development condition, the linear trend had an average Cohen's f^2 effect size of 9.92, 95% CI [9.81, 10.03].

Curvilinear: The addition of the quadratic term reduced the effect size to 1.22, 95% CI [1.11, 1.35] and the cubic term to .40, 95% CI [0.27, 0.53].

Moral Condition

Linear: In the morality condition, the linear trend had an average Cohen's f^2 effect size of 4.42, 95% CI [4.30, 4.55].

Curvilinear: The effect size of the quadratic term was 2.09, 95% CI [1.95, 2.22] and the cubic term was .92, 95% CI [0.76, 1.06]. The linear model had a smaller effect size in comparison to the development condition, though the curvilinear terms fit better in the moral rather than the fetal development condition.

Discussion

The results of the abortion study supported the hypothesis that non-moral judgments of fetal development proceed linearly while moral judgments are discontinuous (see Figure 6 and Figure 7).

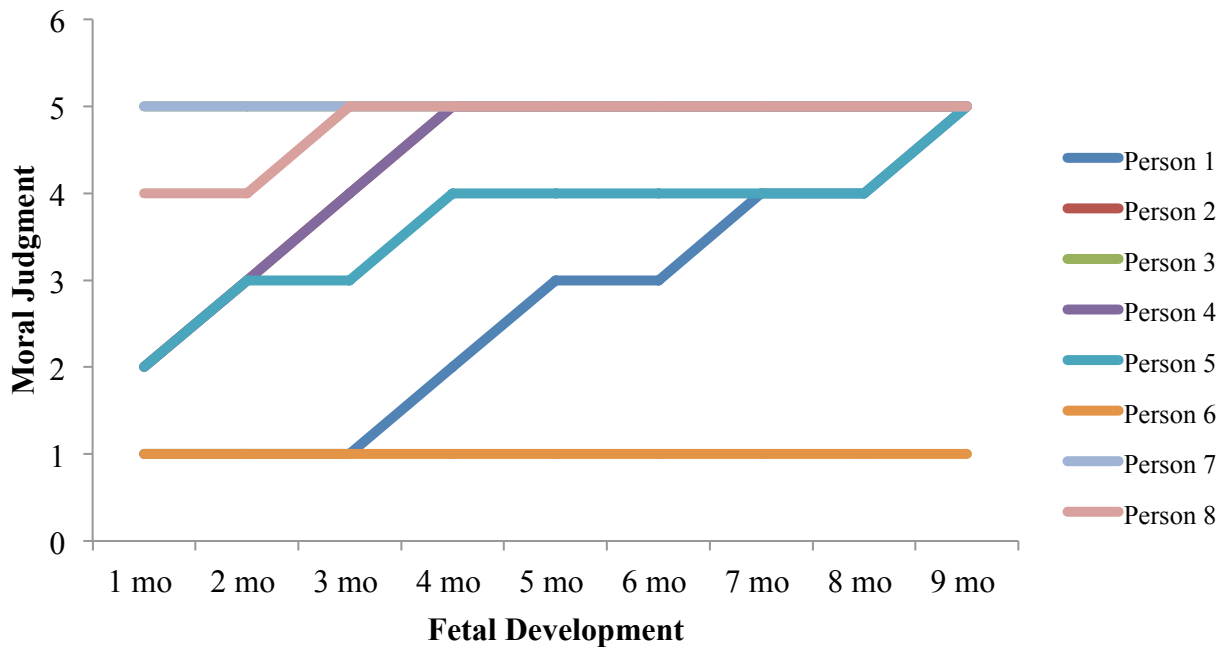


Figure 6. Eight randomly selected means of moral judgment as a function of fetal development.

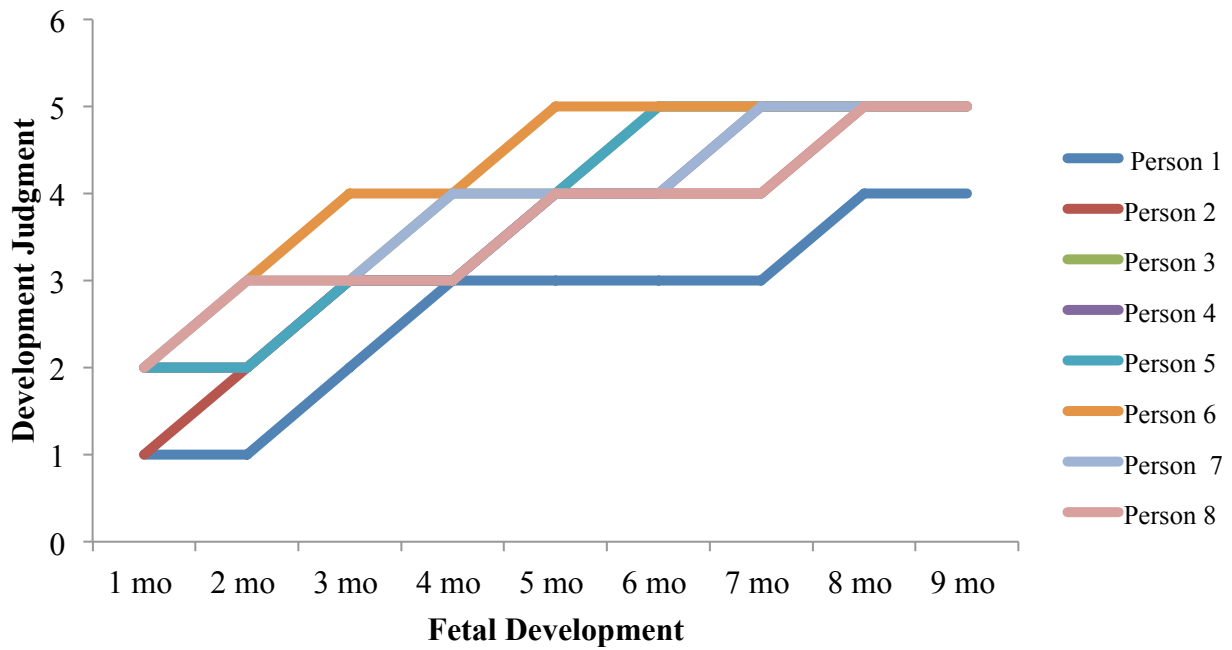


Figure 7. Eight randomly selected means of development judgment as a function of fetal development.

Study 5: Torture

Participants

This study tested the difference between perceptions of discomfort and immorality through a between-subjects (morality vs. discomfort) design. 98 participants completed the survey through mTurk. Of the initial 98, 4 failed the attention check, leaving 94 participants (44% female, 53% male and 3% chose not to respond). Average age of the participants was around 37 years old. All participants were from the United States.

Procedure

In the study, participants read a short vignette about United States soldiers who have captured an enemy combatant (see Appendix A). The enemy combatant has information that the soldiers need, so they decide to engage in ten escalating torturous acts, such as yelling, blindfolding and waterboarding the enemy combatant to retrieve the information. After each act, participants made either a moral judgment (“How immoral is this action”) or a judgment about the level of discomfort the enemy combatant feels (“How uncomfortable is this action for the enemy combatant”) on a 5-point Likert scale from “Not at All” (1) to “Extremely” (5). Participants also completed demographics questions, answered questions concerning their viewpoints on torture and questions about their acceptance of moral ambiguities from the Ethics Position Questionnaire.

Study 5 Results

Non-moral Condition

Linear: In the discomfort condition, the linear trend accounts for 47% of the variance in ratings, $F(1, 468) = 419.20, p < .001$.

Curvilinear: The addition of the quadratic, R^2 change = .005, $p = .029$, and cubic, R^2 change = .021, $p < .001$, terms did significantly increase the variance explained in the model. With regard to the discomfort question, actions followed a clear linear and curvilinear trend. Although this is a non-moral condition, the pattern found was consistent with the expected moral condition results.

Moral Condition

Linear: For immorality, the linear trend accounted for a significant amount of variance in the model, $R^2 = .45$, $F(1, 468) = 387.507$, $p < .001$.

Curvilinear: The addition of the quadratic, R^2 change = .018, $p < .001$, and cubic, R^2 change = .009, $p = .005$, terms did significantly improve the amount of variance explained.

Discussion

The means in both the moral and non-moral judgment conditions follow a non-linear trend. A moral cliff occurred between the act of isolation (discomfort judgment: $M=2.57$, $SD = 1.02$; immoral judgment: $M = 1.79$, $SD = 1.18$) and sleep deprivation (discomfort judgment: $M=3.43$, $SD = 1.10$; immoral judgments: $M = 2.64$, $SD = 1.26$). Both forms of judgment were continuous until reaching sleep deprivation, and then all subsequent torturous acts were rated as slightly or extremely immoral (see Figure 8). It is possible that the discomfort judgment followed a non-linear trend because torture as a form of pain is intrinsically tied to morality. The nature of morality centers on harm, or pain, caused to others, specifically a moral agent harming a moral patient. As a result, painfulness and morality questions are perceived to be similar, thus creating a non-linear trend for both judgments (Gray, Young, & Waytz, 2012; Gray & Wegner, 2008). The discomfort questions were also asked in a moral context and did not focus exclusively on act intensity. Moreover, according to the concept of moral typecasting, the participants may have

identified the fictional enemy combatant as a moral patient suffering unnecessarily since they read the vignette from a distanced perspective (Gray & Wegner, 2010).

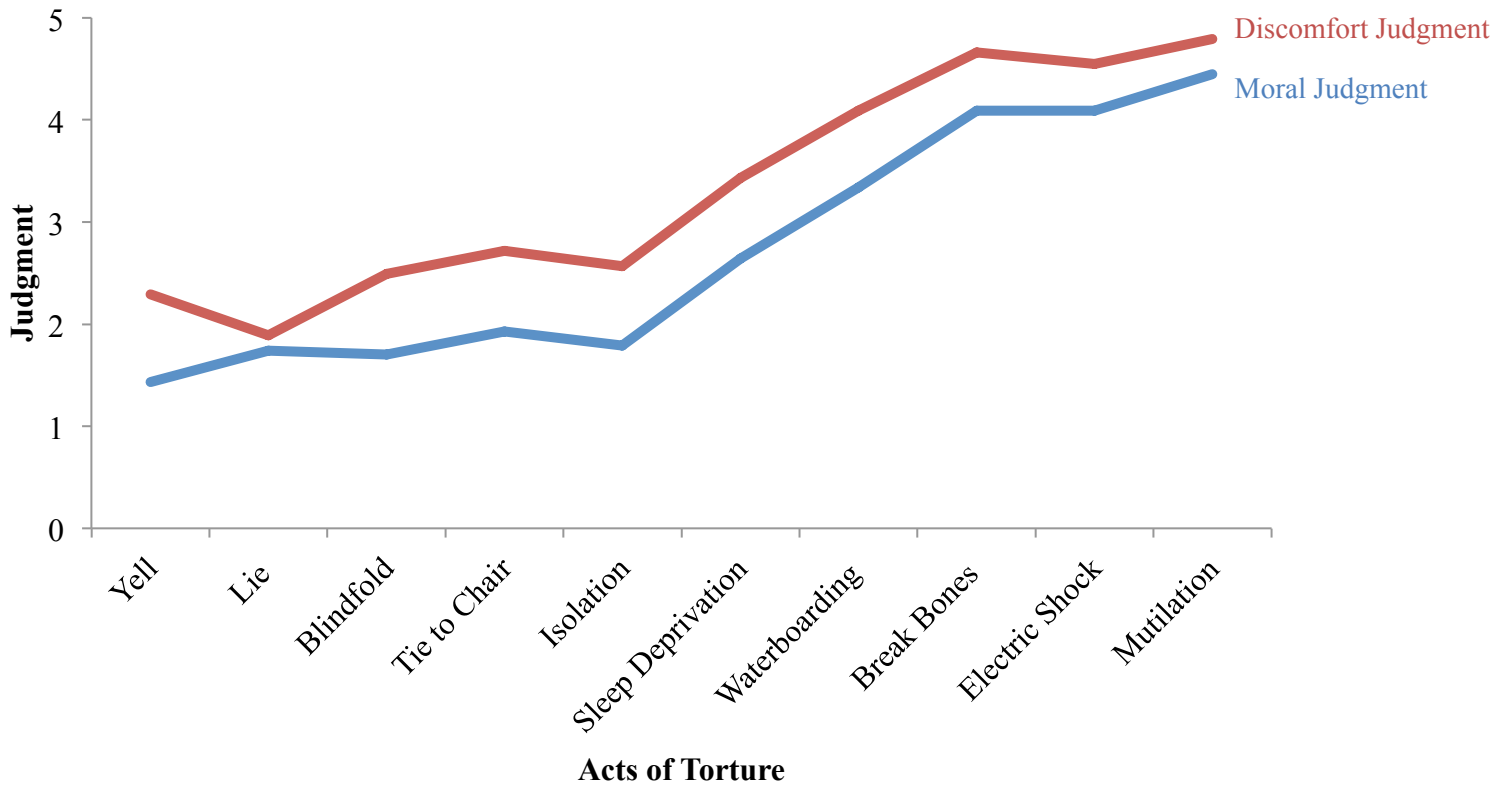


Figure 8. The means of morality and discomfort judgments as a function of the type of torture occurring.

General Discussion

Summary

Study 1 (Intimacy), Study 4 (Fetal Development) and Study 5 (Torture) exhibit the discontinuous nature of certain moral judgments. The non-moral judgments of intimacy and fetal development fit a linear trend while the moral judgments were discontinuous. The moral and non-moral judgments of torture were also discontinuous. Studies 2 and 3 did not support the

hypothesis of a discontinuous moral landscape. Study 2 (Pain) and Study 3 (Office Theft) displayed a linear trend for both moral and non-moral judgments potentially due to the relative lack of importance of the pain actions described and the office items stolen.

Limitations

The non-moral comparison questions in the intimacy, pain, theft and torture studies were cast in a moral light. To avoid this moral component, future studies should ask about the non-moral acts by themselves without including descriptions of the vignettes they accompany. Within the torture study, although the non-moral condition did not ask a question about morality, the perception of torture/pain is intrinsically tied to morality, so both moral and non-moral judgments were similar. The non-moral condition of torture resulted in a curvilinear trend, instead of the predicted linear trend. Due to this condition's moral component, a future investigation should rerun the study asking about the discomfort of each individual torture act without relation to an individual. If a linear trend is not found, a possibility remains that the ten torturous acts were not perceived as continuous.

The results of the theft study were not significant possibly because the office items stolen were not extremely valuable, the least valuable item was a paperclip and the most valuable was a laptop. This study should be rerun with more valuable items. A reason why the pain study did not support our hypothesis could also correspond to the minimally painful acts described.

Furthermore, these studies exclusively focus on acts, both non-moral and moral, and how these actions affect our interpretation of the moral landscape. This discontinuity may not hold true or may be manifested differently in relation to moral character. Therefore, future studies should investigate whether moral character judgments are discontinuous. Additionally, the moral domain contains both good and bad acts (Janoff-Bulman, Sheikh, & Hepp, 2009), but this

project focuses primarily on judgments related to bad acts. Moral judgments of good acts may not demonstrate the same dichotomy that some morally bad acts do.

Strengths

A significant strength of these series of studies was that the acts investigated - intimacy, pain, theft, fetal development and torture – can easily be varied by increasing magnitude, which is conducive to establishing a linear trend of non-moral judgments. Therefore, the uniqueness of the curvilinear morality condition could easily be demonstrated.

Implications and Future Directions

These studies are the first step in finding the existence of moral cliff. However, more research needs to be conducted to find the mechanism behind its occurrence. Potential mechanisms for certain discontinuous moral judgments and future research directions include moral polarization and moral convictions, the perception of a slippery slope of morality and a non-additive perception of moral character.

The significant results of the intimacy, torture and fetal development studies have a variety of implications. Each of these moral issues – infidelity, torture and abortion – can lead to moral polarization between groups with opposing viewpoints (Greene, 2013). Judgments of morality cause individuals to more closely identify with the beliefs and values of their in-groups. Therefore, individuals may form moral judgments with a stronger belief in the correctness of their opinions and the errors of others, creating a more dichotomized view of the moral landscape.

The moral issues of infidelity, torture and abortion are also well aligned with the concept of moral convictions, perhaps to a greater extent than acts of pain and theft are. Moral convictions (Skitka et al., 2005) or evaluations developed from an individual's judgment of the

difference between right and wrong, are deeply rooted emotional feelings and values that align with one's "sense of moral order" (Skitka, 2010, p. 270) in the world, such as the belief that abortion is immoral. In fact, the influence of moral convictions can be so strong that an individual will try to physically distance himself or herself from someone else with a conflicting belief (Skitka, 2010). The strength of these convictions might stem from the fact that the moral landscape is perceived to be unambiguous. Or the inverse could occur in which strong moral convictions may cause people to make more discontinuous moral judgments. Therefore, seeing the world as black and white might be both a cause and a consequence of moral convictions. Either way, this obstinacy coupled with moral polarization can impede compromise and limit perspective taking on various moral and political issues. Disputants may not perceive a common, middle ground. Therefore, future research should investigate the relationship between moral polarization, moral convictions and the moral landscape. Individual differences in moral convictions about a topic might amplify or mitigate the effect of a moral cliff. Manipulation of the moral conviction may strengthen the effect as well.

Another implication from the significant results is that a slippery slope may exist for morality as it does in many political and legal spheres. The general principle of the slippery slope argument relates to the idea that the acceptance of one situation will eventually lead to a subsequent, more undesirable situation because no rational distinction can be made between the two situations (Burg, 1991). In relation to morality, people may believe that once an immoral act occurs or an action changes from moral to immoral, then all subsequent acts will also be immoral. Results from the fetal development study exemplify that once an individual decides that abortion is immoral, whether at one month of fetal development or five months, all subsequent months will also be judged as immoral.

Future research could investigate this concept by identifying if someone commits one bad action that person will be deemed more likely to commit additional bad actions (Freedman & Fraser, 1966). For instance, if John Doe cheats on his girlfriend, does that mean that he is more likely to cheat on his taxes as well? This could be tested within similar domains (i.e., cheating on girlfriend and cheating on taxes) or between different morally bad domains (i.e., identity fraud and cheating).

Similarly, due to this perceived slippery slope of immorality, will the initial immoral act that a moral agent commits be judged more severely than subsequent bad actions committed? Based on the economic framework of diminishing marginal returns (Lane, 2000), the harshest moral judgment could exist from zero bad acts to one bad action; therefore, the third or fourth time an immoral action is committed may not be perceived to be as bad as the first time it was committed. For example, a future study could test if the second-time bank robber is considered “doubly evil” compared to a first time robber.

Another future direction is to examine whether moral character judgments differ from moral act judgments by determining, for example the strength that a bad action has on moral character. Specifically, is perception of moral character non-additive? Will an individual who commits a bad act and then a good act, either be seen as returning to a neutral moral character, or still be judged as exhibiting a negative moral character? To examine whether we dichotomize moral character judgments in addition to certain moral act judgments, a future study could identify how many good actions are needed to outweigh a bad action, if this is even possible at all (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). The directions for future studies mentioned above will build upon the curved nature of the moral landscape, further investigating the claim that certain moral judgments we form are either distinctly good or distinctly bad.

Conclusion

Although morality, like IQ, color and skin pigmentation, is a continuous entity, many of our moral judgments are categorical. This project demonstrates that with moral issues closely tied to strong moral convictions, such as infidelity, abortion and torture, we dichotomize our moral judgments and form discrete judgments of good and bad. Even though the world exists in color, many moral issues are only seen in black and white.

References

- Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology*, 5(4), 323–370. doi:10.1037//1089-2680.5.4.323
- Boring, E. G. (1930). A new ambiguous figure. *American Journal of Psychology*, 42, 444.
doi:10.2307/1415447
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's mechanical turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6(1), 3–5.
doi:10.1177/1745691610393980
- Burg, W. van der. (1991). The slippery slope argument. *Ethics*, 102(1), 42–65.
- Dawkins, R. (2013, January 28). The tyranny of the discontinuous mind. Retrieved from
<http://www.richarddawkins.net>
- Fiske, S. T. (1993). Social cognition and social perception. *Annual Review of Psychology*, 44(1), 155–194. doi:10.1146/annurev.ps.44.020193.001103
- Francescani, C. (2013). George Zimmerman: Prelude to a shooting. *Reuters*. Retrieved June, 12.
Retrieved from <http://graphics.thomsonreuters.com/12/04/Zimmerman.pdf>
- Freedman, J. L., & Fraser, S. C. (1966). Compliance without pressure: the foot-in-the-door technique. *Journal of Personality and Social Psychology*, 4(2), 195.
- Gray, K., & Wegner, D. M. (2008). The sting of intentional pain. *Psychological Science*, 19(12), 1260–1262. doi:10.1111/j.1467-9280.2008.02208.x
- Gray, K., & Wegner, D. M. (2009). Moral typecasting: Divergent perceptions of moral agents and moral patients. *Journal of Personality and Social Psychology*, 96(3), 505–520.
doi:10.1037/a0013748

- Gray, K., & Wegner, D. M. (2010). Torture and judgments of guilt. *Journal of Experimental Social Psychology*, 46(1), 233–235. doi:10.1016/j.jesp.2009.10.003
- Gray, K., Young, L., & Waytz, A. (2012). Mind perception Is the essence of morality. *Psychological Inquiry*, 23(2), 101–124. doi:10.1080/1047840X.2012.651387
- Greene, J. (2013). *Moral tribes: Emotion, reason and the gap between us and them*. Atlantic Books.
- Halberstadt, J., & Winkielman, P. (2014). Easy on the eyes, or hard to categorize: Classification difficulty decreases the appeal of facial blends. *Journal of Experimental Social Psychology*, 50, 175–183. doi:10.1016/j.jesp.2013.08.004
- Harris, C. I. (1992). Whiteness as property. *Harv. L. Rev.*, 106, 1707.
- Hartson, K. A., & Sherman, D. K. (2012). Gradual escalation: The role of continuous commitments in perceptions of guilt. *Journal of Experimental Social Psychology*, 48(6), 1279–1290. doi:10.1016/j.jesp.2012.06.005
- Janoff-Bulman, R., Sheikh, S., & Hepp, S. (2009). Proscriptive versus prescriptive morality: Two faces of moral regulation. *Journal of Personality and Social Psychology*, 96(3), 521–537. doi:10.1037/a0013779
- Lane, R. E. (2000). Diminishing returns to income, companionship – and happiness. *Journal of Happiness Studies*, 1(1), 103–119. doi:10.1023/A:1010080228107
- Lawson, T. F. (2012). Fresh cut in an old wound-a critical analysis of the Trayvon Martin killing: The public outcry, the prosecutors' discretion, and the stand your ground law. Retrieved from http://heinonlinebackup.com/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/ufpp23§ion=21

- Oppenheimer, D. M., Meyvis, T., & Davidenko, N. (2009). Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology, 45*(4), 867–872.
- Peery, D., & Bodenhausen, G. V. (2008). Black + White = Black hypodescent in reflexive categorization of racially ambiguous faces. *Psychological Science, 19*(10), 973–977. doi:10.1111/j.1467-9280.2008.02185.x
- Sherman, M. (2014, March 2). Supreme court looks at Freddie Lee Hall, death row inmate with low IQ. Retrieved from <http://www.huffingtonpost.com>
- Skitka, L. J. (2010). The psychology of moral conviction. *Social and Personality Psychology Compass, 4*(4), 267–281. doi:10.1111/j.1751-9004.2010.00254.x
- Skitka, L. J., Bauman, C. W., & Sargis, E. G. (2005). Moral conviction: Another contributor to attitude strength or something more? *Journal of Personality and Social Psychology, 88*(6), 895–917. doi:10.1037/0022-3514.88.6.895
- Skitka, L. J., & Sargis, E. G. (2006). The internet as psychological laboratory. *Annual Review of Psychology, 57*(1), 529–555. doi:10.1146/annurev.psych.57.102904.190048

Appendix A

This is a portion of the Torture study including the moral and non-moral conditions.

Qualtrics Survey Software

2/28/14 2:56 PM

Block 2

Please answer the following questions to the best of your ability.

Immoral

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to yell at him to get the information.

How immoral is this action?

Not at all Immoral Slightly Immoral Moderately Immoral Very Immoral Extremely Immoral

☐ ☐ ☐ ☐ ☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to lie to him to get the information.

How immoral is this action?

Not at all Immoral Slightly Immoral Moderately Immoral Very Immoral Extremely Immoral

☐ ☐ ☐ ☐ ☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to blindfold him to get the information.

How immoral is this action?

Not at all Immoral Slightly Immoral Moderately Immoral Very Immoral Extremely Immoral

☐ ☐ ☐ ☐ ☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to tie him to a chair to get the information.

How immoral is this action?

Not at all Immoral Slightly Immoral Moderately Immoral Very Immoral Extremely Immoral

☐ ☐ ☐ ☐ ☐

United States soldiers have captured an enemy combatant. They want information that they know

he has. Therefore, they decide to isolate him to get the information.

How immoral is this action?

Not at all Immoral Slightly Immoral Moderately Immoral Very Immoral Extremely Immoral

☐ ☐ ☐ ☐ ☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to utilize sleep deprivation to get the information.

How immoral is this action?

Not at all Immoral Slightly Immoral Moderately Immoral Very Immoral Extremely Immoral

☐ ☐ ☐ ☐ ☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to engage in waterboarding to get the information.

How immoral is this action?

Not at all Immoral Slightly Immoral Moderately Immoral Very Immoral Extremely Immoral

☐ ☐ ☐ ☐ ☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to break some of his bones to get the information.

How immoral is this action?

Not at all Immoral Slightly Immoral Moderately Immoral Very Immoral Extremely Immoral

☐ ☐ ☐ ☐ ☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to utilize electric shock to get the information.

How immoral is this action?

Not at all Immoral Slightly Immoral Moderately Immoral Very Immoral Extremely Immoral

☐ ☐ ☐ ☐ ☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to engage in mutilation to get the information.

How immoral is this action?

Not at all Immoral

☐

Slightly Immoral

☐

Moderately Immoral

☐

Very Immoral

☐

Extremely Immoral

☐

Comfort Level

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to yell at him to get the information.

How uncomfortable is this action for the enemy combatant?

Not at all
Uncomfortable

☐

Slightly Uncomfortable

☐

Moderately
Uncomfortable

☐

Very Uncomfortable

☐

Extremely
Uncomfortable

☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to lie to him to get the information.

How uncomfortable is this action for the enemy combatant?

Not at all
Uncomfortable

☐

Slightly Uncomfortable

☐

Moderately
Uncomfortable

☐

Very Uncomfortable

☐

Extremely
Uncomfortable

☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to blindfold him to get the information.

How uncomfortable is this action for the enemy combatant?

Not at all
Uncomfortable

☐

Slightly Uncomfortable

☐

Moderately
Uncomfortable

☐

Very Uncomfortable

☐

Extremely
Uncomfortable

☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to tie him to a chair to get the information.

How uncomfortable is this action for the enemy combatant?

Not at all
Uncomfortable

☐

Slightly Uncomfortable

☐

Moderately
Uncomfortable

☐

Very Uncomfortable

☐

Extremely
Uncomfortable

☐

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to isolate him to get the information.

How uncomfortable is this action for the enemy combatant?

Not at all Uncomfortable	Slightly Uncomfortable	Moderately Uncomfortable	Very Uncomfortable	Extremely Uncomfortable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to utilize sleep deprivation to get the information.

How uncomfortable is this action for the enemy combatant?

Not at all Uncomfortable	Slightly Uncomfortable	Moderately Uncomfortable	Very Uncomfortable	Extremely Uncomfortable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to engage in waterboarding to get the information.

How uncomfortable is this action for the enemy combatant?

Not at all Uncomfortable	Slightly Uncomfortable	Moderately Uncomfortable	Very Uncomfortable	Extremely Uncomfortable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to break some of his bones to get the information.

How uncomfortable is this action for the enemy combatant?

Not at all Uncomfortable	Slightly Uncomfortable	Moderately Uncomfortable	Very Uncomfortable	Extremely Uncomfortable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

United States soldiers have captured an enemy combatant. They want information that they know he has. Therefore, they decide to utilize electric shock to get the information.

How uncomfortable is this action for the enemy combatant?